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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/627,662	07/28/2000	Sam S. Lightstone	CA990022US1	3033

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EXAMINER

LY, ANH

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 05/22/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/627,662

Applicant(s)

LIGHTSTONE ET AL.

Examiner

Anh Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 03/04/2003 with respect to claims 27-56 have been considered but are moot in view of the new ground(s) of rejection.
2. Claims 27-56 are pending in this application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 27-30, 37-40 and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,129,082 issued to Tirfing et al. (herein Tirfing).

With respect to claim 27, Tirfing discloses receiving data records to load into the table (adding information to the database table: col. 2, lines 37-40 and lines 48-52); operation incrementally update the index on the table as each received data record is added to the table and operation rebuilds the index from the table after all the received data records have been added to the table and operation to update the index with the received data (updating the index file: col. 9, lines 18-24 and col. 11, lines 5-18; rebuilding the index for the database: col. 13, lines 40-45).

Tirfing also discloses selecting one of a first operation and/or second operation based on the heuristic: a rule of thumb that successively determines the most appropriate operation (col. 2, lines 60-64).

Tirfing although teaches heuristic the first operation and/or second operation based on generating and adding the record into the database information (col. 2, lines 49-52 and col. 3, lines 28-32), the heuristic is not explicitly indicated.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the generation and addition the information into the database to obtain the heuristic for determining the operation as taught by Tirfing because it would have made the method being efficiently perform update the database (Tirfing - col. 13, lines 25-30) in the updating index of database table environment.

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With respect to claim 28, Tirfing discloses determining which of the first operation or second operation is more efficient, wherein the first or second operation determined to be more efficient is the selected operation used for updating the index with the received data (col. 2 lines 54-65).

With respect to claim 29, Tirfing discloses wherein determining which operation is more efficient is a function of a percentage of the received data records to add to the table and characteristics of the index (col. 2, lines 45-67).

With respect to claim 30, Tirfing discloses wherein the characteristics of the index used in determining which operation is more efficient comprise a size and a complexity of the index (col. 13, lines 22-40).

Claim 37 is essentially the same as claim 27, except that it is directed to a system rather than a method (adding information to the database table: col. 2, lines 37-40 and lines 48-52; and col. 9, lines 18-24 and col. 11, lines 5-18; rebuilding the index for the database: col. 13, lines 40-45), and is rejected for the same reason as applied to the claim 27 hereinabove.

Claim 38 is essentially the same as claim 28, except that it is directed to a system rather than a method (col. 2 lines 54-65), and is rejected for the same reason as applied to the claim 28 hereinabove.

Claim 39 is essentially the same as claim 29, except that it is directed to a system rather than a method (col. 2, lines 45-67), and is rejected for the same reason as applied to the claim 29 hereinabove.

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Claim 40 is essentially the same as claim 30, except that it is directed to a system rather than a method (col. 13, lines 22-40), and is rejected for the same reason as applied to the claim 29 hereinabove.

Claim 47 is essentially the same as claim 27, except that it is directed to a program rather than a method (adding information to the database table: col. 2, lines 37-40 and lines 48-52; and col. 9, lines 18-24 and col. 11, lines 5-18; rebuilding the index for the database: col. 13, lines 40-45), and is rejected for the same reason as applied to the claim 27 hereinabove.

Claim 48 is essentially the same as claim 28, except that it is directed to a program rather than a method (col. 2 lines 54-65), and is rejected for the same reason as applied to the claim 28 hereinabove.

Claim 49 is essentially the same as claim 29, except that it is directed to a program rather than a method (col. 2, lines 45-67), and is rejected for the same reason as applied to the claim 29 hereinabove.

Claim 50 is essentially the same as claim 30, except that it is directed to a program rather than a method (col. 13, lines 22-40), and is rejected for the same reason as applied to the claim 29 hereinabove.

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6. Claims 31-36, 41-46 and 51-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,129,082 issued to Tirfing et al. (herein Tirfing in view of US Patent No. 6,026,406 issued to Huang et al. (herein Huang).

With respect to claim 31, Tirfing discloses a method as discussed in claim 27.

As to the limitations, "wherein the index comprises a binary tree structure, and wherein a height of the index tree is indicative of the size and complexity of the index," Tirfing does not explicitly indicate that a binary tree structure and a height of the index tree.

However, Huang discloses B-tree index and node and leaf node (col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Tirfing with the teachings of Huang so as to obtain a method for updating an index in on a database table. This combination would have made the method for having a b-tree index structure and a more efficient method for updating indexes in a database system (Huang – col. 3, lines 35-38) in the updating index of database table environment.

With respect to claims 32-33, Tirfing discloses a method as discussed in claim 27.

As to the limitations, "wherein determining which operation is more efficient further comprises considering at least one of the following factors: an estimated time to sort the index keys and an estimated time to rebuild the index from the sorted keys; maintaining a list of threshold values for different index sizes," Tirfing does not explicitly

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indicate that an estimate time for index keys and sorting the index and threshold value for index size.

However, Huang discloses an estimated time for index keys, sort index keys and threshold value (see abstract, col. 3, lines 40-45, col. 7, lines 17-25, lines 38-42 and lines 49-60 and col. 8, lines 1-30; and col. 6, lines 8-15 and lines 58-63).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Tirfing with the teachings of Huang so as to obtain a method for updating an index in on a database table. This combination would have made the method for having a b-tree index structure and a more efficient method for updating indexes in a database system (Huang – col. 3, lines 35-38) in the updating index of database table environment.

With respect to claims 34-36, Tirfing discloses a method as discussed in claim 27.

As to the limitations, “ the number of the received data records as a percentage of all data records in the table; wherein the index comprises a binary tree and wherein the list of threshold values provides one threshold for each of a plurality of different height index binary trees, wherein the threshold selected for comparison with the comparison value is based on the height of the index to update,” Tirfing does not explicitly indicate that threshold value, index binary tree.

However, Huang discloses B-tree index and node and leaf node (col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67) and an estimated time for index keys, sort index keys and threshold value (see abstract, col. 3, lines 40-45, col. 7, lines 17-25,

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lines 38-42 and lines 49-60 and col. 8, lines 1-30; and col. 6, lines 8-15 and lines 58-63).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Tirling with the teachings of Huang so as to obtain a method for updating an index in on a database table. This combination would have made the method for having a b-tree index structure and a more efficient method for updating indexes in a database system (Huang – col. 3, lines 35-38) in the updating index of database table environment.

Claim 41 is essentially the same as claim 31, except that it is directed to a system rather than a method (col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67), and is rejected for the same reason as applied to the claims 30-31 hereinabove.

Claims 42-43 are essentially the same as claims 32-33, except that they are directed to a system rather than a method (see abstract, col. 3, lines 40-45, col. 7, lines 17-25, lines 38-42 and lines 49-60 and col. 8, lines 1-30; and col. 6, lines 8-15 and lines 58-63), and are rejected for the same reason as applied to the claims 32-33 hereinabove.

Claims 44-46 are essentially the same as claims 34-36, except that they are directed to a system rather than a method (col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67; see abstract, col. 3, lines 40-45, col. 7, lines 17-25, lines 38-42 and lines 49-60 and col. 8, lines 1-30; and col. 6, lines 8-15 and lines 58-63), and are rejected for the same reason as applied to the claims 34-36 hereinabove.

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Claim 51 is essentially the same as claim 31, except that it is directed to a system rather than a method (col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67), and is rejected for the same reason as applied to the claims 30-31 hereinabove.

Claims 52-53 are essentially the same as claims 32-33, except that they are directed to a system rather than a method (see abstract, col. 3, lines 40-45, col. 7, lines 17-25, lines 38-42 and lines 49-60 and col. 8, lines 1-30; and col. 6, lines 8-15 and lines 58-63), and are rejected for the same reason as applied to the claims 32-33 hereinabove.

Claims 54-56 are essentially the same as claims 34-36, except that they are directed to a system rather than a method (col. 1, lines 10-38, col. 2, lines 5-15 and col. 3, lines 57-67; see abstract, col. 3, lines 40-45, col. 7, lines 17-25, lines 38-42 and lines 49-60 and col. 8, lines 1-30; and col. 6, lines 8-15 and lines 58-63), and are rejected for the same reason as applied to the claims 34-36 hereinabove.

Contact Information

7. Any inquiry concerning this communication should be directed to Anh Ly whose telephone number is (703) 306-4527 or via E-Mail: **ANH.LY@USPTO.GOV**. The examiner can be reached on Monday – Friday from 8:00 AM to 4:00 PM.

If attempts to reach the examiner are unsuccessful, see the examiner's supervisor, Kim Vu, can be reached on (703) 305-4393.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231


or faxed to: (703) 746-7238 (after Final Communication)

or: (703) 746-7239 (for formal communications intended for entry)

or: (703) 746-7240 (for informal or draft communications, or Customer Service Center, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (receptionist).

Inquiries of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.


JEAN M. CORRIELUS
PRIMARY EXAMINER

AL/m
May 9th, 2003